

REMARKS

Claims 1, 4, 6, 8-11, 13, 15-17, 19-21 and 31-46 are now pending in the application. Claims 1, 9, 13, 19, and 31 have been amended. Claims 33-46 have been added with this amendment. The new claims and the amendments to the claims are believed to be wholly supported within the specification and claims as originally filed. Claims 1, 13 and 31 have been amended to require that the compositions are directed to gear oils. Claims 9, 13, and 19 have been amended as to their Markush language.

New claim 33 is believed to be supported in originally filed claim 1, and in the specification at page 5, lines 27-29, page 14, lines 28-30 and page 27, line 20-23.

Support for new claim 34 is found in the specification at page 1, line 1. Support for new claims 35-38 is found on page 14, lines 28-30. Support for claims 39-42 is found on page 27, lines 20-23. Support for claims 43-46 is found on page 7, line 20.

Claims 1, 4, 6, 8-11, 13, 15-17, 17-21 and 31-32 stand rejected under 35 USC §103 as being obvious and therefore unpatentable over Tipton et al (U.S. Patent 5,594,378). The Examiner has maintained the position that Tipton et al teach polymeric compositions with improved shear stability in transmission and hydraulic fluids while maintaining high and low temperature viscosity characteristics. The Examiner is of the opinion that the polymeric component (A) of Tipton et al encompasses component (A) of Applicants' claims. The Examiner is also of the opinion that component (C) of Tipton et al encompasses claim component (B) of the present claims. The Examiner has acknowledged that the limitation in Applicants' claims regarding the Taper Bearing Shear Test is not taught by Tipton et al. However, the Examiner is of the opinion that the lubricating compositions of Tipton et al may also have the same shear loss.

In this Office Action, the Examiner has indicated that the limitation previously submitted by Applicants regarding the multigrade gear oil compositions is not persuasive since the language had been inserted into the preamble of the claims. Claims 1, 13 and 31 have been amended to place that limitation into the body of the claims. Applicants request the Examiner to reconsider this limitation. In particular, Applicants submit that Tipton et al do not teach gear oil compositions. Tipton et al teach transmission fluids and hydraulic fluids. Tipton et al are particularly concerned with automatic transmission fluids

and hydraulic fluids. These fluids do not operate in the same environment as gear oil compositions as is known to a person skilled in the art. In particular, a gear oil is exposed to greater pressures than automatic transmission and hydraulic fluids. The gear oils must maintain protection under boundary lubrication conditions (e.g., where pressure squeezes out most of the lubricant between gear parts). The gear oils act to reduce and/or eliminate destructive metal-to-metal contact. The gear oils have typically been thicker (e.g., higher viscosity) than those used in automatic transmission and hydraulic fluids. Tipton et al do not contain any teaching or suggestion that would lead a person skilled in the art to formulate a gear oil.

Applicants have submitted in their previous response a page from the Southwest Research Institute regarding the Tapered Roller Bearing Shear Test. In particular, Applicants call the Examiner's attention to the following quotation regarding the intensity of the Tapered Roller Bearing Shear Test. Referring to the test, the paper indicates that

This test fills the gap between older shear tests (Orbahn and Sonic) and the demanding real world of gear lubricants. Recent tests have shown that the 20-hour CEC L-45-T-93 shear test provides the best correlation to actual field performance when compared to other industry shear tests.

The Tapered Roller Bearing Shear Test recognizes that the previous shear tests did not reflect the "demanding real world" of gear lubricants. As presently amended, Applicants' claims require that the multigrade lubricating compositions are gear oils. Tipton et al are silent about the type of shear testing used to determine that the material is "shear stable." Shear stability is the measure of a lubricants ability to maintain viscosity under shearing conditions. The amount of polymer present and its molecular weight effects the lubricant's shear stability. Tipton et al contain no teaching that would motivate a skilled person to prepare a gear oil with the specific components and their quantities as required by Applicants' claims. Accordingly, Applicants submit that Tipton et al do not render their claims obvious.

With this amendment, Applicants have submitted new claim 33. This new claim requires, in part, that polymer (A) is present in an amount from about 20% to about 40%

by weight and the polymer being selected from polyalkenes, terpolymers of ethylene, propylene and a dimer monomer, and mixtures thereof. Applicants have also required that the lubricating composition is free of polyacrylates having a Mw (weight average molecular weight) of less than 50,000. The other limitations regarding component (B) and the shear loss in the taper bearing roller are similar to previously submitted claims.

Applicants submit that this claim is patentable over Tipton et al because Tipton et al do not teach or suggest the quantity of component (A) required by the present claims. In particular, Tipton et al contain no teaching to such a high level of polymer (A) component. Applicants acknowledge that Tipton et al teach that polymer (A) may be present in an amount from about 0.1% to about 20% by weight in transmission fluids.

However, Applicants have taught in their specification the criticality of the shear requirements in the Taper Bearing Shear Test. Applicants' specification has shown that the criticality of the molecular weight and quantity of component (A). Applicants' claims are patentable over Tipton et al in spite of this apparent overlap. (In re Touvay et al, 121 USPQ 265 (CCPA 1958)).

Additionally, Tipton et al teach away from Applicants' claimed invention. In particular, Tipton et al contain no teachings or suggestions which would lead one of ordinary skill in the art to use the particular components of Applicants' claims in their particular quantities. Tipton et al teach away from the amount of component (A) required by Applicants' claims. Tipton et al teach that about 2% to about 10% by weight is the preferred amount for component (A). Tipton et al use less than 7% of component (A) in Examples D, E and F. A person skilled in the art, understanding a taper bearing shear test and its severity, would not be motivated by Tipton et al to increase the level of component (A) of Tipton et al to the levels required by Applicants' claims. Accordingly, Applicants submit that Tipton et al do not render claim 33 obvious.

Claim 34 requires that the composition of claim 33 is a gear oil. For the reasons given above for claims 1, 13 and 31, Applicants submit that this claim is patentable over Tipton et al because Tipton et al do not teach or suggest gear oil compositions as claimed by Applicants.

Claims 35-37 are directed to gear oils which contain a sulfurized member selected

from an oil, an unsaturated fatty acid, an unsaturated fatty ester, an olefin, a terpene, a Diels-Alder adduct and mixtures thereof. Claim 38 is directed to the lubricating composition of claim 33 which further comprises the sulfurized member. Tipton et al contain no teaching or suggestion that would lead one of ordinary skill in the art to make a gear oil lubricating composition with these sulfurized members. Tipton et al teach additional additives which may be present in transmission or hydraulic fluids. Tipton et al contain no teaching that would lead one of skill in the art to select the specific sulfurized members required by these claims from the general lists provided in Tipton et al. Therefore, Applicants submit that claims 35-38 are not rendered obvious by Tipton et al.

Claims 39-42 further required the presence of a phosphorus acid ester or salt, a phosphite or mixtures thereof to the compositions of claims 35-38. There is no motivation in Tipton et al to select these particular phosphorus compounds to be used in combination with the specific sulfur compounds as required by these claims. Applicants submit that Tipton et al do not render these claims obvious.

For the foregoing reasons, Applicants submit that Tipton et al does not render their claims obvious. Applicants request withdrawal of the rejection and allowance of the claims.

In the event any issues remain in the prosecution of this application, Applicants request that the Examiner call the undersigned attorney to expedite allowance of the claims. If any fees are required for the filing of these papers, Applicants request the Commissioner to charge those fees to Deposit Account #12-2275.

Respectfully submitted,

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